SALTER'S PATENT FOR FLUSHING DRAINS.

We have recently examined an arrangement for rendering the flood-gates of sewers self-acting, invented by Mr. Salter, which appears well calculated to effect the object in view.

According to the mode now in use, flood-gates are placed across the sewers, in order to produce a head of sewage water equal to their height, and are kept closed by means of an iron bar, which is removed periodically by an attendant to allow the pent-up water to rush forth and clear all before it. The flushing, therefore, takes place only when the attendant is present to set the flood-gates free, and it follows that the gates must often remain closed long after they ought—consistently with the purpose of their construction—to be closed. To make the flushing system perfect, the flood-gates should open the instant the necessary quantity of flushing water has accumulated behind them, and this it is which Mr. Salter has accomplished.

The inventor hooks the end of an iron strut to the ordinary gate, and, at an angle of about 45°, inserts the other end into a strong staple firmly fixed in the brickwork of the sewer. The gate is thereby made perfectly fast; but in the centre of the strut there is a weighted joint, which, when acted on in the following manner, instantly sets it free. When the collected water has attained the given height, it is conveyed by an overflow-pipe from one side of the gate to the other into an iron basin which works on an axis, to which is attached a lever, extending beneath the joint in the strut, when the gravity of the water in the basin overcomes the weight of the lever, and the joint of the strut is suddenly lifted upwards, on which the accumulated body of water forces the gate open, and the strut becomes contracted into the form of a reversed V. While the water is rushing through the sewer, the basin, by being inverted, empties itself and returns to its former position; and when the current has slackened so as to be of no farther service for flushing, the preponderating weight of the strut being upwards, it gradually falls back to its original position, and the gate is closed.

It has been applied with much success in the great sewer which runs it through St. Giles's; the sewer is kept as clean by it as if it were swept. The patentee has a simple and efficient apparatus for flushing house drains. *Apropos* of flushing, what is the result of the inquiry ordered by the late Commission of Sewers (on the motion of Mr. Leslie) into the enormous expenditure on flushing made by the officers of that commission, during a certain period of time?

SUPPLY OF WATER TO SOUTHAMPTON.

At the last meeting of the Southampton Board of Water, a statement was read from Serjeant Campbell, showing that the town might be amply supplied with water from the Otterbourne Springs. In these days of "sanitary improvement" every instance of the mis appropriation or the misdirection of the resources of towns by their municipal authorities is not without its use, if held up as a warning to others.

In the case of Southampton it would be difficult to find a more flagrant example of misdirection than the hitherto fruitless search for water affords. Within the last few years about 45,000*l.* have been expended for this object, nearly the half of which sum has been literally sunk in the Artesian well on the common, and the remainder has been expended—thrown away would perhaps be a more appropriate term—in boring other wells, and in constructing drains and reservoirs for collecting the surface-water of the upper part of the common. The result of all up to the present time is an insufficient, intermitting, supply of dirty water to the town.

The report seems to show, that if a proper examination had taken place before commencing these expensive and unprofitable works, an abundant supply of the purest water could have been had within seven or eight miles of the town, which could be brought into it for less than half the cost that has actually been incurred. The town authorities, however, are so reluctant to retrace their misdirected steps that they have given notice of their intention to move for a new bill in the next session of Parliament, to confer upon them an extension of their powers to eke out their present supply of dirty water, with an additional supply of much the same quality from the rivers and canals in the vicinity of the town.

A number of the rate-payers have memorialised the Board of Health to send down an assistant-commissioner to investigate the sanitary affairs of the town.

WORKS IN CHESTER.

The tower of St. Peter's Church, Chester, the tenders for erecting which showed so much difference, is now completed. It was commenced in May last. The style aimed at by the architect, Mr. James Harrison, is that of the transition from the Decorated to the Perpendicular. The tower is 19 ft. 6 in. square, and 75 ft. high; it is ornamented with four gurgoyles and eight pinnacles. The erection is divided into three stories; the upper one forming the belfry. The entrance doors leading into the church and tower are cut out of one of the oak bearers taken from the old building; the doors are hung on ornamental hinges. The ceiling under the tower in the passage through the rows is panelled. Mr. Morris is the contractor, and executed the carving himself. One of the local papers, to show Mr. M.'s expertness, says he commenced and finished the carving of three heads in one hour and forty minutes! We advise him on another occasion not to be in such a hurry.

The arrangement of the buttresses to this tower is peculiar, and to our eyes not pleasing. The main buttresses have other smaller buttresses set against them obliquely. The architect is to be praised for having avoided the use of the red sand stone, as originally intended, and to which we objected at the time. The stone used is from Minera, near Ruabon, and costs about 2½*d.* per foot cube.

St. Peter's Church has been repaired and re-arranged, internally, under the same architect. Some of the ugly galleries have been set back, but a new one on the south side has been erected, which is to be regretted. When we were in Chester the bosses of roof were coloured blue and white, and had a ghastly effect. We hope these have been altered. The builders were Bellis and Williams; the mason, Morris. A curious painting was found on the north-east pillar of tower.

At the Chester cemetery, beautifully situated, the entrance-lodge is late Tudor, the chapel Norman, and the dissenters' chapel Elizabethan, if we may so term it. The architect is Mr. Penson.

The iron girder-bridge over the Dee, close by, to which the accident happened some time since, is strengthened by wooden struts.

THE MARBLE ARCH.

Permit an ex-architect, through the medium of your widely circulating columns, to offer a suggestion on the destiny of the marble arch. It is reported that, instead of removing it to some other site, it is the intention of the Government to sell it as old materials. This I cannot believe; I do not think they would venture to commit such a vandalism. The arch is affirmed to have cost an extravagant sum, and this is another reason why we ought not to be deprived of it. It is, moreover, our only one: the French have several such in their metropolis; and unless we keep what we have got, it will appear that we did not think ourselves worthy even of this. My suggestion is, that it be brought down and placed in front of the landscape garden interior of St. James's-park, to which it would serve as a royal entrance, and would still seem to keep up a connection with the palace, which would be seen in the distance beyond it. Placed here, in the vicinity of the House Guards and Admiralty, it would also serve exceedingly well as an arch commemorative of the valorous doings of our army and navy, and would occupy an analogous position to the arch of the Tuileries at Paris. Our glorious Nelson has his monument, and our great living hero his, but where is the monument to our soldiers and sailors who gained such immortal renown in the great European war that grew out of the French revolution? A good opportunity now presents itself for performing an act of justice which has too long been delayed. By the addition of some trophy on the top, and a suitable inscription in front, the unfortunate arch, which seems to create such embarrassment, might be converted into a lasting memorial of British valour, and the money it has cost, and still may, will never be regretted.

H. C. Barlow, M.D.

SCENERY AT THE LYCEUM THEATRE.

A more extraordinary and beautiful piece of stage decoration and invention, than that which forms the closing scene to Mr. Planché's Christmas extravaganza at the Lyceum Theatre, was never witnessed. It is difficult to understand how such brilliant effects of colour are obtained. In previous scenes, especially an Italian ball-room scene, architecturally correct, and a landscape with the foliage of the passion flower spanning the stage, Mr. Beverly had shown his admitted skill as a stage-painter; but the *tour de force* was reserved for the wind-up, and carried the house by storm. The business of the scene goes on in front of a vast cluster of palm leaves, which, when the climax approaches, opens, each leaf showing its golden lining as it bends towards the stage, and discovers a circle of nymphs bearing aloft the "crown jewels." As a morning contemporary remarks, to say what the jewels are made of, what the nymphs are dressed in, is impossible,—it was a blaze of light and colour. Mr. Planché, as a matter of course, has done his part well—Madame Vestris, here; and the result is a perfect whole. We shall look in at the other houses next week.

A REMEDY FOR DAMP WALLS.

So often are your readers annoyed by the intrusion of damp into walls, and the disfiguration thereby of paper-hangings, decorations, &c., that you and they will forgive our calling their attention to a means of obviating the evil, and one which we can with confidence recommend. We do not suggest any plan for preventing damp occurring in walls (its existence, arising from a variety of causes, is generally first made manifest by its effects), but to prevent its being visible, or doing any injury when too late to remove it.

The remedy is this:—Coat the part of the wall affected by damp, *and for some distance around it*, with knotting composition—the same article used by builders for priming the knots in wood. It should be applied upon the bare plaster, and however damp this may be, the composition, from its rapidly drying property, will in a few minutes form a smooth and very tough coating, or skin. Two coats should be given, which will prove quite impermeable to damp, and upon which the most delicate papers may be put immediately without fear of injury. The idea occurred to us about a year ago, and we accordingly tested it upon a wall where the damp arose from the ground, and likewise upon a staircase wall, which was always damp from an imperfect joint in a leaden water-pipe behind the plaster. The result is very satisfactory, as it is impossible to detect the slightest damp either by the sight or touch. We are not aware that knotting composition has ever been applied to this purpose before, and we therefore make this communication for the benefit of the trade.

Mander, Brothers.

Wolverhampton.

The Inventor of the Block Machinery.—Some of your contemporaries in their notice of the late Sir M. I. Brunel, have claimed too much for him. The original inventor of the block machinery was Walter Taylor, an Englishman. He took out a patent for it, and for years supplied the navy with blocks. When his patent expired he tried to get an extension of it, and, on failing, Government employed Brunel to set it up at Portsmouth. He improved and added to it, but he has not the least right to the credit of the original invention. If this be questioned, you shall have a full statement from the best authority.

N. R.

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